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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,708	02/08/2005	Peter Gerell	1533-1003	6699
466 7590 07/10/2008 YOUNG & THOMPSON 209 Madison Street Suite 500 ALEXANDRIA, VA 22314			EXAMINER DENG, ANNA CHEN	
			ART UNIT 2191	PAPER NUMBER
			NOTIFICATION DATE 07/10/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

embon@young-thompson.com

### Office Action Summary

**Application No.**

10/500,708

**Applicant(s)**

GERELL ET AL.

**Examiner**

ANNA DENG

**Art Unit**

2191

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 29 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)
- Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. This action is in response to amendment filed on 2/29/2008.
2. The objection to the Abstract is withdrawn in view of applicant's amendment.
3. The objection to claims 1-4, 6, 8-11, and 13 is withdrawn in view of applicant's amendment.
4. The rejection under 35 U.S.C. 101 to claims 8-17 is withdrawn in view of applicant's amendment.
5. Claims 1-14 are pending.
6. Claims 1-14 stand finally rejected.

***Response to Amendment***

***Information Disclosure Statement***

7. The information disclosure statement (IDS) filed on 7/2/2004 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the publication listed in page 2 of the IDS does not identified relevant pages of the publication. The IDS filed on 7/2/2004 has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 7-8, and 14 are rejected under 35 U.S.C. 102 (e) as being anticipated by Breslow et al. US 2007/0058656 A1 (hereinafter Breslow).

**Per Claim 1 (currently amended):**

Breslow discloses:

- **receiving a program code, comprising a plurality of instructions for the communications network** (Breslow, [0012], “a data communication network, ...receives data packets”; [0042], “A data packet payload may also carry, for example, network management information and instructions sent by a network administrator to one or more network entities”),
- **dividing the program code into a plurality of sequences that each perform a certain task on a data packet passing through the**

- communications network** (Breslow, [0041], "data messages sent through a digital data communication and other communication network are divided into one or more digital data "packets", [0042], a header portion for carrying address and control information, ...uses the address and control information in the header to route the data packet through the network to the intended destination),
- **defining, based on the program code, a plurality of relocation objects, each corresponding to a dependency relationship between two or more of the sequences** (Breslow, [0050], "The sequence number 54 in a data packet identifies the position of the data packet in a series of data packets transmitted in a connection...The sequence number 54 assists the destination terminal in correctly reordering the data packets when they are received"),  
**and**
  - **allocating the sequences to a processor instruction memory** (Breslow, [0115]-[0116], "separating the primary data packets may be accomplished by directing the received data packets into separate allocated sections of memory...While reordering may be accomplished by allocating a separate memory space and copying the primary data packets in proper order into that memory space...").

**Per Claim 7 (currently amended):**

Breslow discloses:

- **the step of linking at least one sequence, obtained by the step of dividing the program code, to a sequence, obtained by dividing another program code** ([0116], "For data packets having the same source identifier at a block 164 the destination terminal reorders the primary data packets according to their respective sequence numbers...reordering may also be accomplished by creating a linked list or other reference that readily sets forth the correct order of the primary data packets").

**Per Claims 8 and 17 (currently amended):**

These are system version of the claimed method discussed above (claims 1 and 7), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also anticipated by Breslow.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2-6, and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breslow et al. US 2007/0058656 A1 (hereinafter Breslow), in view of Wagner, US 2003/0023388 A1 (hereinafter Wagner).

**Per Claim 2 (currently amended):**

Breslow teaches base on at least some of the sequences and at least some of the relocation objects (Breslow, [0041], "data messages sent through a digital data communication and other communication network are divided into one or more digital data "packets"; [0050], "The sequence number 54 in a data packet identifies the position of the data packet in a series of data packets transmitted in a connection...The sequence number 54 assists the destination terminal in correctly reordering the data packets when they are received"); Breslow does not explicitly teach **the steps of forming at least one directed graph, and determining a longest execution path through the directed graph**. However, Wagner teaches **the steps of forming at least one directed graph**, (Wagner, [0061], "a directed graph or digraph is a mathematical object consisting of nodes and directed edges. In a graph representation of a genetic network, the nodes of the graph correspond to genes, and two genes, say gene 1 and gene 2, are connected by a directed edge") and determining a longest execution path through the directed graph (Wagner, [0139]-[0142], "it can be useful to determine the longest path connecting two genes, such as for comparison to other paths or to use to determine the path ...The longest path algorithm presented herein rests on the following two propositions...").

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Breslow to include **“the steps of forming at least one directed graph, and determining a longest execution path through the directed graph”** using the teaching of Wagner. The modification would be obvious because one of ordinary skill in the art would be motivated to apply graph theory mathematics to the field of genetic networks to produce adjacency lists that describe the genetic interactions of gene networks based on gene perturbation data (Wagner, [0006]).

**Per Claim 3 (currently amended):**

Breslow teaches **the step of entering at least one state preserving operation in the instruction memory** (Breslow, [0054], “unpacking is performed by copying the secondary data packets from the primary packet payload to an output queue implemented in memory”); Breslow does not explicitly teach **so as to make at least two execution paths equally long**. However, Wagner teaches **so as to make at least two execution paths equally long** (Wagner, [0109], “the longest possible chain of nested calls of PRUNE\_ACC is (n-1) if G has n nodes. For an node I calling PRUNE\_ACC, the number of nested calls is at most equal to the length of the longest path starting at I”).

**Per Claim 4 (currently amended):**

The rejection of claim 3 is incorporated, and Breslow further teaches **the step of moving at least one sequence in the instruction memory** (Breslow, [0115]-[0116],



"separating the primary data packets may be accomplished by directing the received data packets into separate allocated sections of memory...While reordering may be accomplished by allocating a separate memory space and copying the primary data packets in proper order into that memory space...").

**Per Claim 5 (currently amended):**

Breslow teaches **the step of entering at least one state preserving operation in the instruction memory** (Breslow, [0054], "unpacking is performed by copying the secondary data packets from the primary packet payload to an output queue implemented in memory"); Breslow does not explicitly teach **the length of the at least two execution paths correspond to the longest execution path**. However, Wagner teaches **the length of the at least two execution paths correspond to the longest execution path** (Wagner, [0142], "the longest path  $p(u,w)$  between  $u$  and  $w$ , ... is equivalent to the sum over the longest paths  $p(u,v)+p(v,w)$ , maximized over all  $v$  from which  $w$  is accessible").

**Per Claim 6 (currently amended):**

Breslow teaches **A method for a communications network, comprising the step of receiving a program code** (Breslow, [0012], "a data communication network, ...receives data packets"), Breslow does not explicitly teach **the step of determining the existence of any circle reference by any of the relocation objects between any of the sequences**. However, Wagner teaches **the step of determining the existence**

**of any circle reference by any of the relocation objects between any of the sequences** (Wagner, [10109]-[0110], "It contains of two loops...the longest possible chain of nested calls of PRUNE\_ACC is (n-1) if G has n nodes").

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Breslow to include "the step of determining the existence of any circle reference by any of the relocation objects (10) between any of the sequences (7)" using the teaching of Wagner. The modification would be obvious because one of ordinary skill in the art would be motivated to apply graph theory mathematics to the field of genetic networks to produce adjacency lists that describe the genetic interactions of gene networks based on gene perturbation data (Wagner, [0006]).

**Per Claims 9-13 (currently amended):**

These are system version of the claimed method discussed above (claims 2-6), wherein all claim limitations also have been addressed and/or covered in cited areas as set forth above. Thus, accordingly, these claims are also obvious.

***Response to Arguments***

Applicant's arguments filed 2/29/2008 have been fully considered but they are not persuasive.

Applicant argued:

Breslow et al. describe how to split and allocate data packets for transmission over a communication network.

However, the present invention does not pertain to how to split and allocate the data packets. I

Instead, the present invention, as it is set forth in independent claims 1 and 8, relate to how and where to place multiple sequences of a program code in an instruction memory...The sequences are executed by a communications network, i.e., by a processor in a communications network, on data packets passing through the communications network.

More specifically, the instruction memory comprises rows and columns...Thus, each sequence is a row of machine code instruction commands that will be executed consecutively...

Further, by means of the relocation objects defined, the processor can perform a jump to another sequence of instruction words in another row of the instructions memory...

The present invention thereby accomplishes synchronization of program code that are dependent on each other.

Claims 1 and 8 of the present invention are thus not anticipated by Breslow et al.

Examiner response:

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies

(i.e., how and where to place multiple sequences of a program code in an instruction memory; by means of the relocation objects defined, the processor can perform a jump to another sequence of instruction words in another row of the instructions memory; accomplishes synchronization of program code that are dependent on each other) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

**Breslow teaches receiving a program code, comprising a plurality of instructions for the communications network** (Breslow, [0012], “a data communication network, ...receives data packets”; [0042], “A data packet payload may also carry, for example, network management information and instructions sent by a network administrator to one or more network entities”), **dividing the program code into a plurality of sequences that each perform a certain task on a data packet passing through the communications network** (Breslow, [0041], “data messages sent through a digital data communication and other communication network are divided into one or more digital data “packets”, [0042], a header portion for carrying address and control information, ...uses the address and control information in the header to route the data packet through the network to the intended destination), **defining, based on the program code, a plurality of relocation objects, each corresponding to a dependency relationship between two or more of the sequences** (Breslow, [0050], “The sequence number 54 in a data packet identifies the position of the data packet in a series of data packets transmitted in a connection...The sequence number 54 assists

the destination terminal in correctly reordering the data packets when they are received”), and allocating the sequences to a processor instruction memory (Breslow, [0115]-[0116], “separating the primary data packets may be accomplished by directing the received data packets into separate allocated sections of memory...While reordering may be accomplished by allocating a separate memory space and copying the primary data packets in proper order into that memory space...”). Thus, Breslow teaches all the limitations in independent claims 1 and 8.

### ***Conclusion***

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136 (a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anna Deng whose telephone number is 571-272-5989. The examiner can normally be reached on Monday to Friday 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Zhen can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Anna Deng/

Examiner, Art Unit 2191

/Wei Zhen/

Supervisory Patent Examiner, Art Unit 2191